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Regen Care: A self-sustainable, urban-scale project that promotes healing through communal support and spatial design

Fatama Mugbil

Regen Care

A self-sustainable, urban-scale project that promotes
healing through communal support and spatial design

Bachelor of Architecture | Thesis 2021
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By Fatama Mugbil

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A self-sustainable, urban-scale project that promotes
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Request for Approval of Thesis Research
Project Book is presented to:

Selen Okcu

and to the
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by

Fatama Mugbil

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Bachelor of Architecture

Kennesaw State University
Marietta, Georgia

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All praises and thanks to God.

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Introduction

Thesis Statement

Regen Care

A self-sustainable, urban-scale project that promotes healing through communal support and spatial design

Thesis Abstract

Nowadays, we rely mostly on hospitals to aid us or the medicine prescribed by our doctors to cure us. But, not everyone has that opportunity because not everyone can afford and/or access healthcare. And with poor health, there's poor people, causing then the homeless people to become more vulnerable.

However, with the idea of healing by design, there can be a way to facilitate healing by using thoughtful environmental and spatial design strategies that can accommodate our wellbeing. Although every site has its own conditions, the same concept can be applied through different regions where our environment can support our healing process.

For instance, in a region like Sudan, one fourth of its population— being 9.3 million people— are currently suffering from either poverty, food insecurity, natural hazards and/or high-inflation rates due to civil injustice. Around 8.4 million of them are currently lacking access to basic services such as food, water, sanitation, healthcare, and education. This has even, moreover, led to a malnutrition crisis and an increase in disease outbreaks, affecting more than 2.2 million children.

My goal is to create a self-sustaining system where members of the community can help each other— a place that not only heals, but also strengthens those who are physically and/or mentally deprived. I am proposing to you all …

Regen care; a self-sustainable, urban-scale project that promotes healing through communal support and spatial design. This concept will incorporate the use of spatial design, therapeutic architecture, indoor-outdoor transitional healing spaces and programmatic features that will support healing.

This concept will also revolve around communal efforts where the healthy will aid the sick and nurture their growth through a participation of vital services. These services are important for aiding the sick by providing them with food, water, medicine, and resources using nature's given assets. After the sick is then cured, they will also play the same role in healing and supporting— as a result, creating a cycle of regenerative care. Overall, this self-sustaining system will encourage mutual support, create job opportunities, and promote healing through design.

With proper training and care, Regen Care is aimed to transform people into healthy contributors of a community from being cured to then curing others.

*What is **Regen Care**?*

*Also known as, **Regen**-erative **Care***

The word ***Regen*** symbolzies the goal of my project which is to promote the ***regeneration of food***, ***knowledge*** and ***resources*** as means to self-sustain a community.

While the word ***Care*** represents the notion of ***support*** and the ***provision of necessity***.

Regen Care is an ***urban-scale*** project that operates in ***site-scale and building-scale***. It consists of spaces that focus on ***healthcare***, ***education***, ***living***, and the ***production of food***.

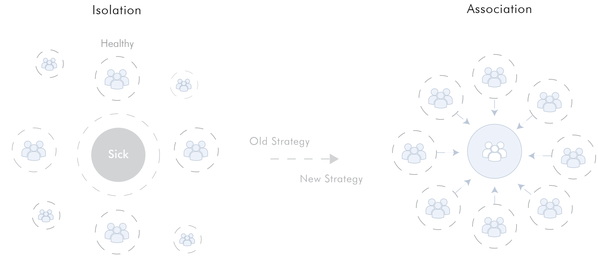
*What is my **methodology**?*

As for my approach, I have began my project by creating a ***master plan*** with a series of ***programmatic spaces*** in a ***site-scale format***. Then, I have selected one of those spaces to design in ***building-scale***.

*How does **it work**?*

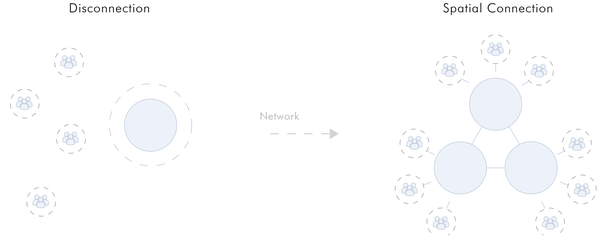
1. Communal Support

Community plays an important role in healing, not only those who are certified.



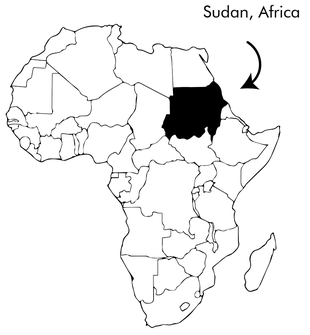
2. Spatial Design

Our environment influences our wellbeing, behvaior and lifestyle. As an architect and designer, our job is to design spcaes that accomodate our lifestyles.



The Problem

Location: Sudan, Africa



Summary

There are a total of 43 million people in Sudan with 9.3 million of them being in need of humanitarian assistance. 7.8 million people in Sudan are in severe need due to their physical and mental wellbeing, whereas 8.4 of them are in need due to their living standards. Moreover, as shown from the demographics, around 55% of those in need in Sudan are women, with 58% being children and 15% being those with a disability.

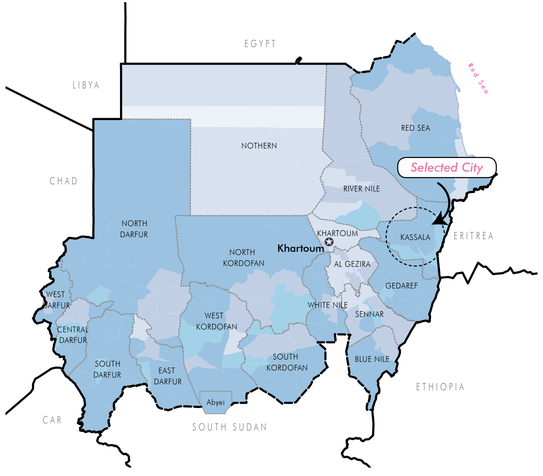
Severity of Needs in Sudan[0.9]

TOTAL POPULATION

43M

PEOPLE IN NEED

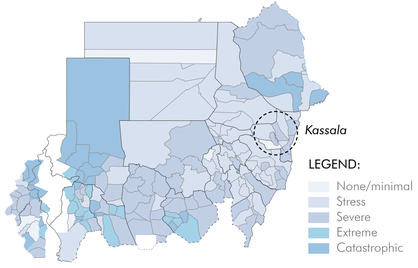
9.3M



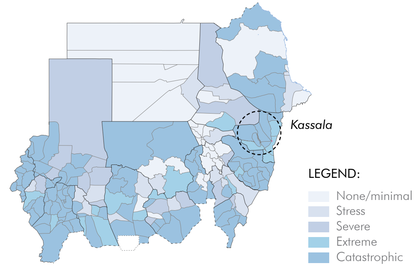
LEGEND: None/minimal Stress Severe Extreme Catastrophic

Severity of Needs in Sudan[0.9]

Physical and mental wellbeing severity of needs



Living standards severity of needs



Key Findings in Sudan[1.0]

PEOPLE IN NEED	WOMEN	CHILDREN	WITH DISABILITY
9.3M	55%	58%	15 %

By Humanitarian Consequence

CONSEQUENCE	PEOPLE IN NEED
Physical and mental wellbeing	7.8M
Living standards	8.4M

By Population Groups

GROUP	PEOPLE IN NEED
IDP	1.8M
Returnees	0.3M
Refugees	1.1M
Vulnerable residents	6.1M

*IDP = Internally Displaced People

By Gender

GENDER	IN NEED	% P
Boys	2.4M	26%
Girls	2.9M	32%
Men	1.6M	17%
Women	1.9M	20%

By Age

AGE	IN NEED	% P
Children (0 - 17)	5.3M	58%
Adults (18 - 59)	3.5M	37%
Elders (60+)	0.5M	5%

With Disability

	IN NEED	% P
Persons with disability	1.4M	15%

The Proposal

Location: Kassala, Sudan

What do they need?

Sudan lacks clinics that can provide a complete health care package. Currently, only 33 per cent of health facilities offer the complete basic healthcare package, which include:

- Maternal healthcare serivces
- Reproductive healthcare services
- Nutrition services
- Immunization
- Infectious diseases
- Free medicines

Regen Care Campus for Kassala

Healthcare for Human/Livestock + Food Security + Vocational Education and Training

Program:

1. Healthcare Center (SELECTED BUILDING FOR DESIGN)
2. Vocational Education + Training center (VET Center)
3. Vet Hospital
4. Community Housing
5. Administrative Building

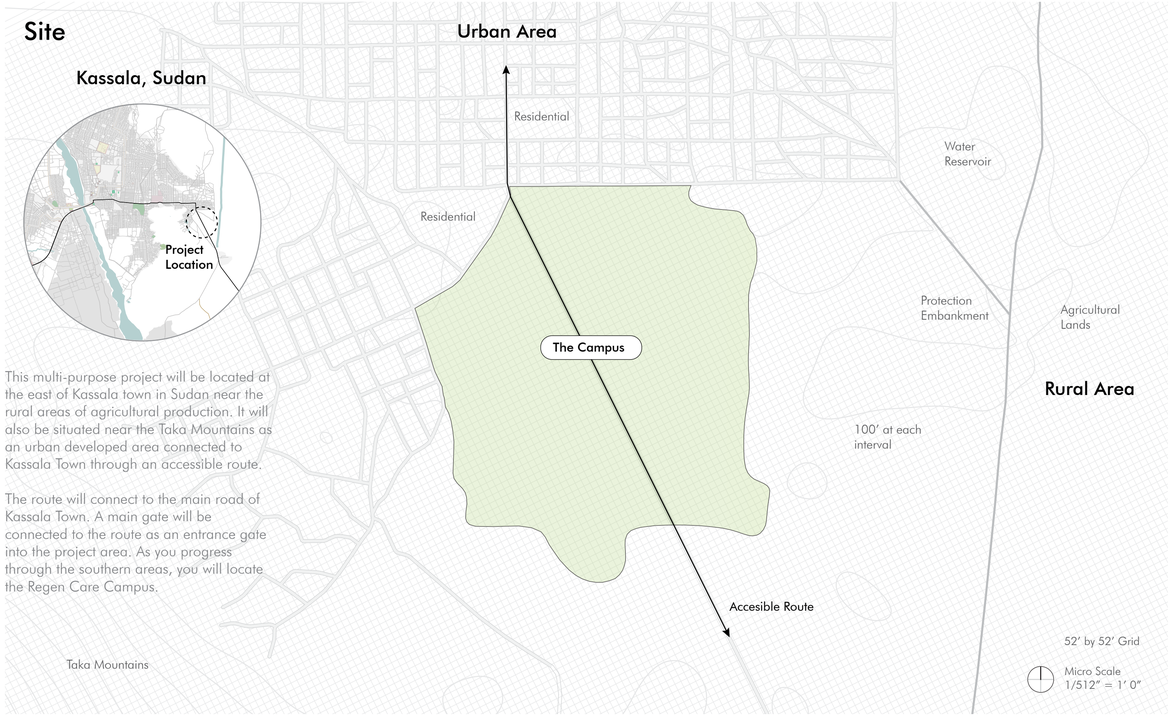
The Solution:

The design solution that I have proposed is a campus for the community, primarily those who have been either physically/ mentally deprived or internally displaced. In this campus, I have a proposed a series of programmatic spaces aimed to heal, strengthen, and educate the sick and unable, and then transform them into healthy contributers of the community.

This project is meant to be sustainable and affordable; Therefore, I am using local workforce and traditional method of construction for my design.

Moreover, to reduce costs, I have focused on designing single-story structures and including affordable materials like brick, natural reed, and bamboo within my design.

Site



This multi-purpose project will be located at the east of Kassala town in Sudan near the rural areas of agricultural production. It will also be situated near the Taka Mountains as an urban developed area connected to Kassala Town through an accessible route.

The route will connect to the main road of Kassala Town. A main gate will be connected to the route as an entrance gate into the project area. As you progress through the southern areas, you will locate the Regen Care Campus.

The Campus:

1) Healthcare Center

The healthcare center will include 3 clinics which are the maternity care clinic, emergency care clinic, and the primary clinic.

The Maternity Care Clinic will include:

- Maternal Care
- Neonatal Intensive Care Unit
- Obstetrics & Gynecology

The Emergency Care Clinic will include:

- Operating Suite
- Emergency Unit
- Short-stay Units

The Emergency Care Clinic will include:

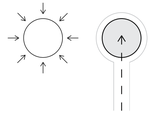
- Primary Care
- Nutrition Services
- Internal Medicine

3) Vet Hospital

The Vet hospital will treat farm animals and will have an area for vaccination. Once treated, they will be used during the food production process.

Type of orgainzation used:

Centralized Organization



I have used this type of organization to layout the three clinics adjacent to the main road. I found this type of organization to be best because it allowed me to create 3 points of access to highlight the 3 clinics.

Type of orgainzation I'd like to use:

Grid Organization

I would like to use this type of organization for layout out the veterinarian hospital along with the vet area for animal treatment.

2) Vocational Education + Training Center

The VET Center (a.k.a. The Vocational Education + Training Center) will educate students admitted into the program and provide training services along with production units; these production units will work as training units to enhance the trainee's skills, knowledge and generate a production of products.

Program for Education:

- Classrooms
- Computer Lab
- Library
- Conference Room for workers
- 2 Meeting Rooms for staff
- Restrooms
- Kitchen
- Cafeteria
- Exhibition Hall
- Storage Spaces

Program for Training + Production Units:

- Fish Farm "Aquaponics"
- Poultry Farm (for breeding chickens, producing eggs & chicken meat)
- Greenhouse(s); which will grow off-season crops
- Dairy Farm; for producing milk, cheese, and yogurt
- Workshop for mechanical, electrical, plumbing, and agricultural works
- Mill Factory to provide food for fish, poultry, and dairy farms

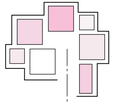
The products generated from the production units will then be **transported to Kassala Town to generate profit** for this project.

Products produced from the units:

- vegetables
- fish
- dairy milk
- cheese
- yogurt
- eggs
- chicken meat.

Type of orgainzation I'd like to use:

Clustered Organization



I would like to use this type of organization to organize the different production units and then group them using the landscape design.

+

Grid Organization

I would like to use this type of organization to create a hierarchy of spaces defind by its shape and functionality on a grid layout.

4) Community Housing

The housing district will consist of living spaces for the:

- Trainees
- Staff
- Workers
- Families who are **in need** and whom are **internally displaced**.

Type of orgainzation I'd like to use:

Grid Organization

I would like to use this type of organization to layout the housing types and locate the agricultural plots for food production.

5) Administration

This will be a office building for the administators and staff who will run the Regen Care Campus. Typically, the administation will be run by a **non-profit organization**.

Type of orgainzation I'd like to use:

Centralized Organization

I would like to use this type of organization to highlight the adminstration building as a centralized space along the main road.

Types of systems:

Water

There will be 2 wells dug from the ground to create water tanks and pipe systems, which will be connected to the areas of my project such as the training service units, workshops, health and housing buildings.

Electricity

There will be photovoltaic solar panels which will provide electricity during the daytime. During the night, there will be batteries used to provide the electricity.

When acitivties will begin:

The participation in the different activities of the project will take place when:

- The administration group is appointed/recruited.
- The staff for the healthcare center, vet hospital, professors and workers for the VET Center, as well as the workers for the workshops are recruited.
- The students are admitted into the program.
- Internally displaced families are admitted to their homes

Innovation:

The innovation I'm hoping to propose in this field of discourse is a model that can be replicated in Kassala state or other states of Sudan. This model will provide, support and heal those with any means of deprivation to improve their welfare & wellbeing.

Concept Diagrams

SELECTED BUILDING FOR DESIGN

1 Healthcare Center

3 Clinics for treatment

2 VET Center

Education + Training + Food production

3 Vet Hospital

Animal treatment + Vaccination

4 Community Housing

Housing for those in need + Food production

5 Admin Building

Run by non-profit organization

Conceptual Layout

Chapter 2

Design Analysis

Ordering Principles

Spatial Relationships

Spatial Organization

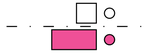
Spatial Qualities

Design Analysis

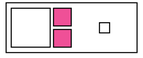
Ordering Principles[1.1]

Axis

Symmetry

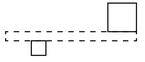


Hierarchy

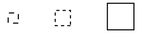


Rhythm

Datum



Transformation



Axis[1.1]

A line established by two points of space, about which forms ad spaces can be arranged in a symmetrical or balanced manner.

Defining the axis through–

Building Form

Courtyards

Gateways

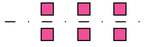
Symmetry[1.1]

The balanced distribution and arrangement of equivalent forms and spaces on opposite sides of a dividing line or place or about a center or axis.

Types of Symmetry–

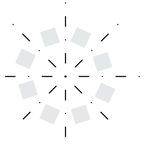
Bilateral Symmetry

A balanced arrangement of elements on opposite sides of a median axis.



Radial Symmetry

A balanced arrangement of elements radiating at any angle around a central axis.



Hierarchy[1.1]

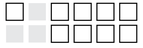
The articulation of the importance or significance of a form or space by its size, shape, or placement relative to the other forms and spaces of the organization

Defining hierarchy through–

Size

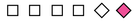
Shape

Placement



Rhythm[1.1]

A unifying movement characterized by a patterned repetition or alternation or formal elements or motifs in the same or modified form.

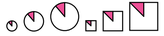


Defining rhythm through–

Size

Shape

Detail Characteristics



Datum[1.1]

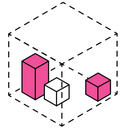
A line, plan, or volume that, by its continuity and regularity, serves to gather, measure, and organize a pattern of forms and spaces.

Defining the datum as a–

Line

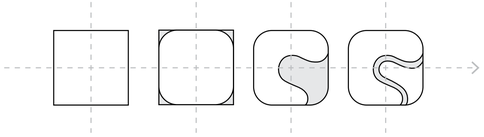
Plane

Volume



Transformation[1.1]

The principle that an architectural concept, structure, or organization can be altered through a series of discrete manipulations and permutations in response to a specific context or set of conditions without a loss of identity or concept.

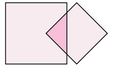


Design Analysis

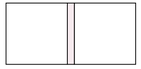
Spatial Relationships[1.2]

Space within a Space

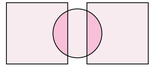
Interlocking Spaces



Adjacent Spaces

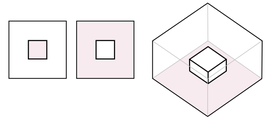


Spaces Linked by a Common Space



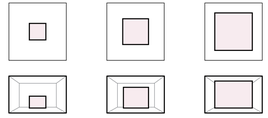
Space within a Space[1.2]

A space may be contained within the volume of a larger space.

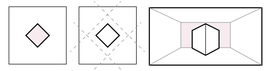


Identifying space through–

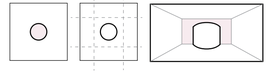
Size



Orientation

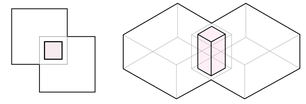


Form



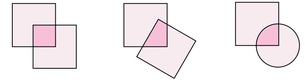
Interlocking Spaces[1.2]

The field of a space may overlap the volume of another space.

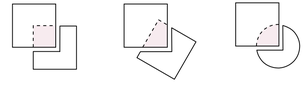


Ways to interlock spaces–

Merge



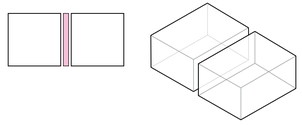
Integrate



Link

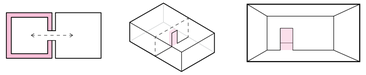
Adjacent Spaces[1.2]

Two spaces may adjoin each other or share a common border.

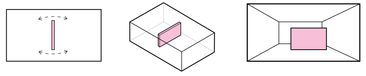


Types of seperating planes–

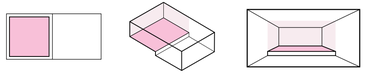
Void



Plane

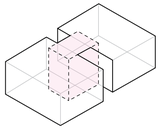


Levels



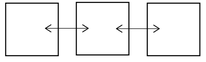
Spaces Linked by a Common Space[1.2]

Two spaces may rely on a intermediary space for their relationship.

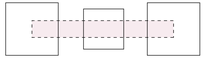


Linking spaces using–

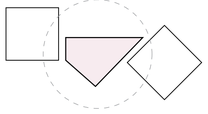
Direction



Form



Nature



Design Analysis

Spatial Organization[1,3]

Centralized Organization

Linear Organization

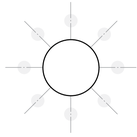
Radial Organization

Clustered Organization

Grid Organization

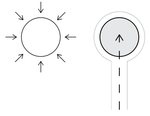
Centralized Organization[1,3]

A central, dominant space about which a number of secondary spaces are grouped.



Can be used to–

- establish points or places in a space



- terminate points or axial conditions

- serve as an object-form within a defined field or volume of space

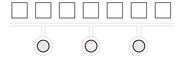
Linear Organization

A linear sequence of repetitive spaces.

Can be used to emphasize spaces–

- at the end of the linear sequence

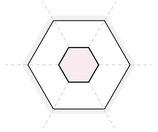
- offset from the liner organization



- at the pivotal points of a segmented linear form

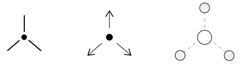
Radial Organization[1.3]

A central space from which linear organizations of space extend in a radial manner.

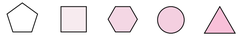


Can be used to–

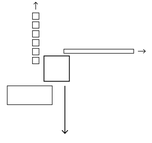
- connect central spaces to specific elements in a linear fashion



- maintain regularity of the organization's overall form

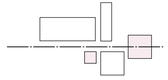


- respond to different individual requirements of function and context



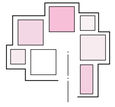
Clustered Organization[1.3]

A linear sequence of repetitive spaces.



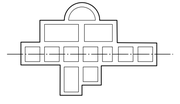
Can be used to–

- group spaces by size, form, function or proximity



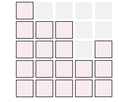
- define a field or volume of a space

- unify portions of an organization through axial conditions or symmetry



Grid Organization[1.3]

Spaces organized within the field of a structural grid or other three-dimensional framework.

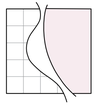


Can be used to–

- create a set of positive and negative spaces by adding or subtracting units on a grid

- create a hierarchical set of modules differentiated by size, proportion and location

- undergo transformations by defining a major space or accommodating a natural feature of a site

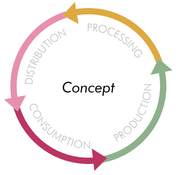


Design Analysis

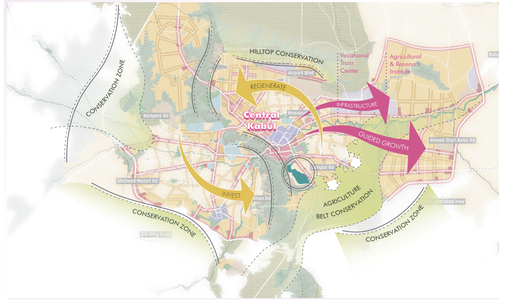
Precedent Studies

Kabul Urban Design Framework

"The framework outlines strategies that direct urban expansion away from areas of ecological importance and reinforce existing networks to provide social amenities for all" (Sasaki, n.d.).



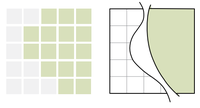
Micro-Scale[1.4]



Macro-Scale

Grid Organization

"The framework ensures the connection between agriculture and the city remain tightly linked, leveraging the existing agricultural belt east of central Kabul as a crucial component of this relationship" (Sasaki, n.d.).



Ananas New Community

"The plan celebrates the agricultural, social, and ecological heritage of the site. It draws from essential elements of Filipino culture to cultivate – within the context of an evolving urban district – an ecosystem that actively supports a more sustainable regional food network" (Sasaki, n.d.).

Concept[1.5]

Micro-Scale[1.5]

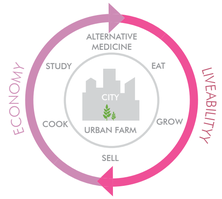
Macro-Scale

Linear Organization

This plan has a "series of Pollinator Paths, linear community gardens with a range of plot types, are distributed within the plan so that every resident has access to an agricultural plot in less than a two-minute walk" (Sasaki, n.d.).

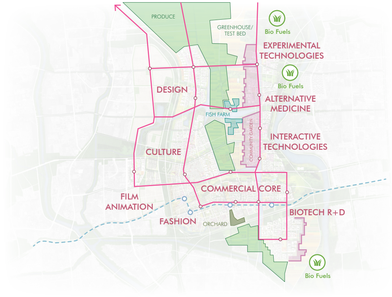
Songzhuang Arts and Agriculture City

"The urban form of the district are organized into a series of clusters that follow a familiar structural system: catalytic land uses organized around a primary public space and augmented by a series of programs that facilitate living, working, and recreation" (Sasaki, n.d.).



Concept[1.6]

Micro-Scale[1.6]



Macro-Scale[1.6]

Grid Organization

"Songzhuang's development clusters are organized with a central core of a catalyst program (educational, cultural, commercial, and civic uses) arranged around a primary public space. This compact structure ensures that all facets of daily life are at the center of a 10-minute walking radius" (Sasaki, n.d.).

Spatial Qualities

Healing by Design

Healing by Design

What is heath?

"Health is a ***state of complete physical, mental and social well-being*** and not merely the absence of disease or infirmity" (World Health Organisation, 2019).

What does it mean to heal?

(Merriam-Webster, 2019)

- to make ***sound*** or ***whole***
- to cause an undesirable condition ***to be overcome***
- to ***restore*** to original purity or integrity

What does it mean to heal by design?

Healing by design is when the ***architectural manipulation of space*** acts as a catalyst in creating a healing environment that may affect the physical and psychological behavior of the patient (Rethinking The Future, 2020).

Healing Spaces

What is a healing space?

"Healing spaces evoke a sense of cohesion of the ***mind, body, and spirit***. They support healing intention and foster healing relationships" (DuBose et al., 2018).

"The environmental variables found to directly affect or facilitate one or more dimension of healing were organized into six groups of variables—***homelike environment, access to views and nature, light, noise control, barrier-free environment, and room layout***" (DuBose et al. 2018).

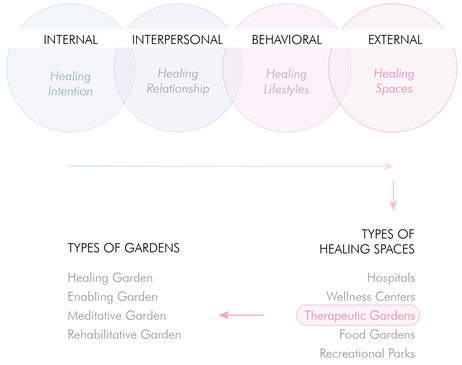
Can our environment influence our healing?

"The environment cannot cause healing to occur but can facilitate engagement in behaviors and emotions that support healing; the environment can ***induce physical and emotional responses such as happiness, joy, and relaxation; and the built environment can enhance individual control and functionality***—all of which are antecedents to healing" (DuBose et al. 2018).

Healing Environment

Optimal Healing Environment[1.7]

This diagram represents the innate healing process of an individual and expands into the different types of external spaces for healing.



Healing Transitions

Indoor-Outdoor Transitions[1.8]

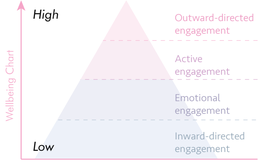
"A principal model of four zones of contact with the outdoors in healthcare settings" (Bengtsson, 2015).

Spatial Zones–

1. from inside the building
2. transition zone
3. immediate surroundings
4. the wider neighbourhood

Triangle of Supporting Environments[1.9]

This pyramid is a model to present the relationship between people and the outdoor environment in healthcare settings (Bengtsson, 2015).



Healing Spaces

Therapeutic Gardens

Healing Garden

Enabling Garden

Meditative Garden

Rehabilitative Garden

Therapeutic Gardens

"A therapeutic garden is an outdoor garden space that has been specifically designed to meet the physical, psychological, social and spiritual needs of the people using the garden as well as their caregivers, family members and friends" (Wikipedia Contributors, 2019).


Fig. 2.0

Healing Garden

A healing garden can be "considered as a concept for a garden with an applied design to recover from a disease, focusing more on mental health and overall well-being" (Montaz, 2017, as cited in Faba, 2002).

Design Principles

Sense of Control

- Allowing *awareness* and *ease of access*
- Allowing *freedom to choose* between areas
- Allowing access to *privacy*

(Montaz, 2017; Severtsen, n.d.)


Fig. 2.1

Social Support

- Designing *spatially enclosed* settings
- Incorporating *private areas* for communication

(Montaz, 2017; Severtsen, n.d.)


Fig. 2.2

Physical Exercise and Movement

- Using *structural elements* such as walking paths
- Providing *play areas* for children

(Montaz, 2017; Severtsen, n.d.)


Fig. 2.3

Positive Distractions

- Including a variety of *scented flowers* with bright colors and textures
- Including *medicinal and edible plant* species to *engage* all senses

(Montaz, 2017; Severtsen, n.d.)


Fig. 2.4

Enabling Garden

An enabling garden "provides horticultural experiences for people of all ages and abilities." "They are designed to be barrier-free and to provide sensory stimulation and physical activities in a non-threatening environment" (DiNardo et al., 2013).

Design Principles

Workability

- Designing *raised bed planters* and open areas beneath tables to accomodate the knees of wheelchair users
- Desinging low tables to *accomodate* young gardenrs and children

(DiNardo et al., 2013)


Fig. 2.5

Accessibility

- Desinging *smooth, firm surfaces* for wheelchair users
- Desinging *small-scale settings* for children

(DiNardo et al., 2013)


Fig. 2.6

Sense of Place

- Providing *reference points* such as a pergola, a fountain, wind chimes or a seating area
- Designing *wide circular pathways* with a focal point

(DiNardo et al., 2013)


Fig. 2.7

Sensory Stimulation

- Provide *perennial plants* such as mint or rosemary to *stimulate smell* and a variety of others plants that offer colors and textures.

(DiNardo et al., 2013)


Fig. 2.8

Security

- Designing *fences* or *structural barriers* made of natural materials to provide *safety* and storage areas for hanging planters

(DiNardo et al., 2013)

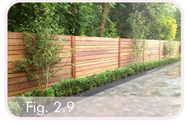


Fig. 2.9

Meditative Garden

Meditative gardens "are intimate spaces created for unwinding and reflecting, away from the noise and clutter of daily routines" (Lynn, 2020).

Design Principles

Simplicity

- Strategically locating a pergola, hedge or fence to help ***define boundaries***
- Establishing a ***focal point*** like a statue, boulder or a water feature
- Adding ***vertical interest*** by strategically locating a tree with colorful foliage

(Lynn, 2020; Jane, 2018; Schwartz, 2018)


Fig. 3.0

Comfort

- Adding ***natural*** or ***manufactured seating*** areas such as flat grounds, benches or small structures.
- Adding ***water features*** such as a regenerating fountain, waterfall or a bubbling bird bath to help ***mask noisy distractions***
- Adding ***flowers*** to bring s***oothing aromas*** to the garden, such as aloe, jasmine, rose, chamomile, or lavender

(Lynn, 2020; Jane, 2018; Schwartz, 2018)


Fig. 3.1

Movement

- Designing a ***winding path*** composed of a fine material that subtly guides visitors toward a seating area or space for quiet contemplation
- Creating ***visual flow*** by making patterns or spiral paths such as a labyrinth
- Pairing ***vertical focal points with horizontal elements*** to provide balance and encourage natural movement

(Lynn, 2020; Jane, 2018; Schwartz, 2018)


Fig. 3.2

Rehabilitative Garden

A rehabilitatiove garden is "designed to be an extension of the therapies and services that are offered indoors, with a focus on using everyday elements in a familiar atmosphere, such as steps, benches, and different surfacing materials" (DiNardo, 2015).

Design Principles

Sense of Belonging

- Having a ***semi-enclosed space*** such as a gazebo supplied with everyday activities to encourage activity
- Providing spaces for hosting events or ***social activities*** as an amenity

(DiNardo, 2015)


Fig. 3.3

Multi-functional

- Providing ***different spaces*** for various therapy programs such as physical, occupational, speech, and horticultural therapy, as well as memory care

(DiNardo, 2015)


Fig. 3.4

Customizable

- Adding ***design elements*** that serves the individual's needs such as choice in ***color, materiality*** and ***objects*** in a space

(DiNardo, 2015)


Fig. 3.5

Realistic

- Including a variety of ***surfaces*** and ***real-life*** situations, such as slanting sidewalks or an uneven turf to learn how to negotiate and understand safety

(DiNardo, 2015)


Fig. 3.6

Accessible

- Locating ***outdoor spaces adjacent or close to indoor*** therapy programs for ease of access

(DiNardo, 2015)

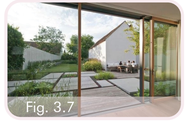
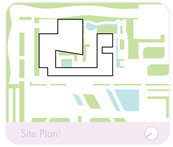


Fig. 3.7

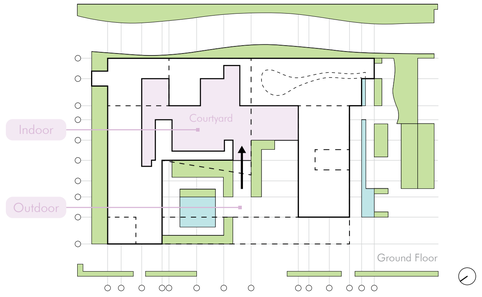
Precedent Studies

Healthcare Design for Mashhad University

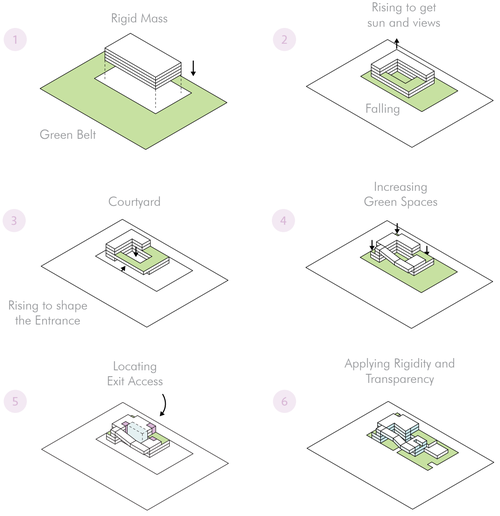
"The purpose of this study is to create a link between health promotion and architecture design of healthcare centers through architectural variables affecting stress reduction" (Sal Moslehian n.d.).



Building Mass[3.8]

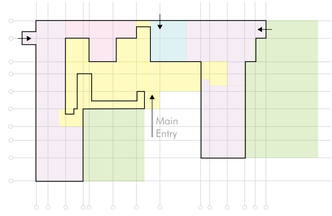


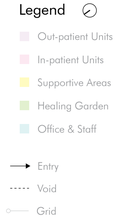
Design Process[3.8]



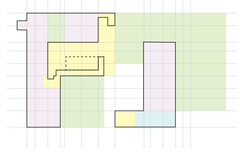
Spatial Study[3.8]

Ground Floor Plan

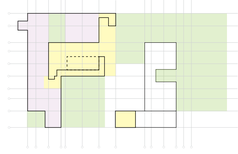




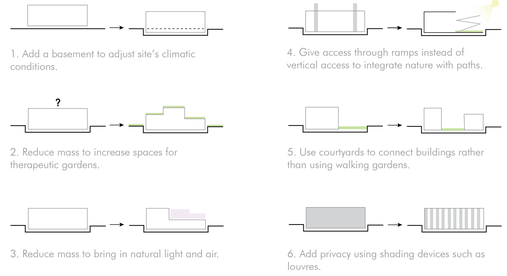
First Floor Plan



Second Floor Plan



Design Concept[3.8]



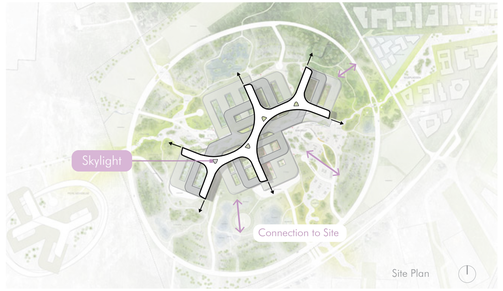
Grid Organization

This project uses a structural grid to layout programmatic spaces and adjust the landscape's design.

New North Zealand Hospital

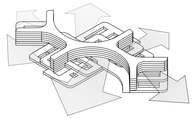
"The hospital architecture blends human and natural elements consistently, indoors and outside, to create a healing architecture with focus squarely on the patient. The architectural design expression is therefore also based on a soft, organic and humanistic idiom" (Moller n.d.).

Building Mass[3.9]



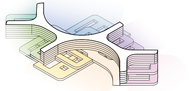
Design Concept[3.9]

Connection to Site

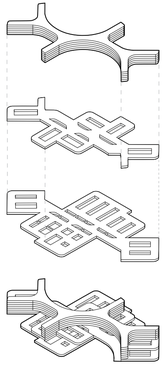


Defining Areas of Access

Apply Programmatic Zones

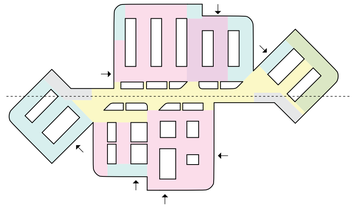


Layering Different Levels



Spatial Study[3.9]

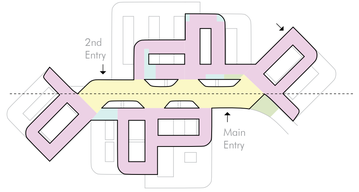
Ground Floor Plan



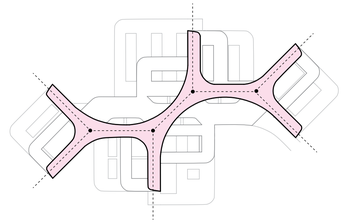
Legend

- Out-patient units
- In-patient units
- Supportive Areas
- Research & Lab
- Office & Admin
- Other
- Entry
- Main Access

First Floor Plan

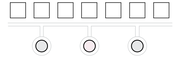


Fourth Floor Plan



Linear Organization

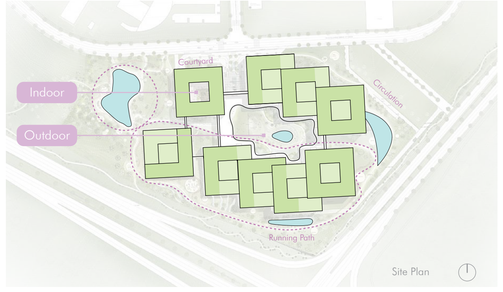
This project uses a linear organization by offseting programmatic spaces along the main access.



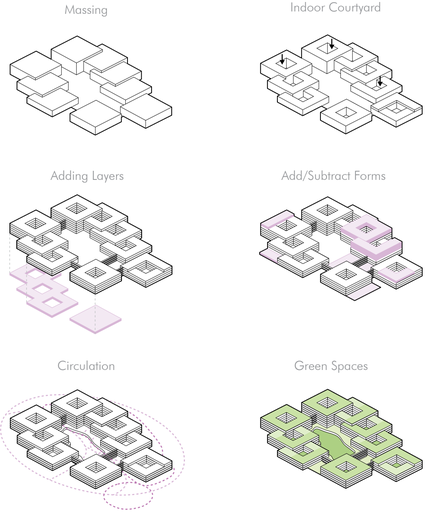
Woodlands Integrated Healthcare Campus

"The hospital is defined by a clear structure consisting of four principal user communities. Each area has a courtyard space that is customised to the needs of the wide range of different users and the atmosphere of each section - with an emphasis on individualised use and clear ownership" (Moller n.d.).

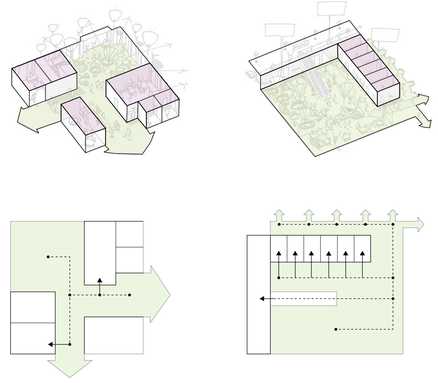
Building Mass[4.0]



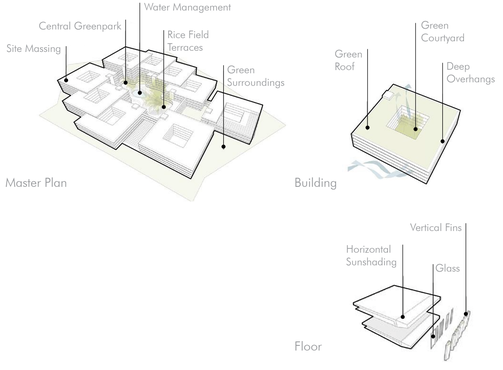
Design Concept[4.0]



Spatial Configuration[4.0]

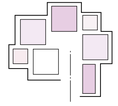


Spatial Qualities[4.0]



Clustered Organization

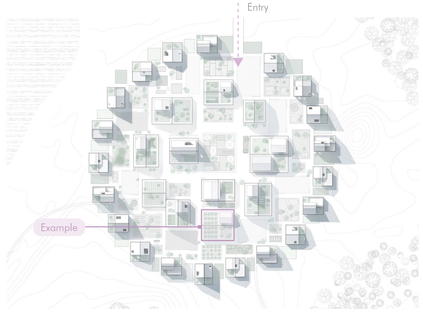
This project uses a clustered organization to group masses together and unite them using a large, public courtyard space.



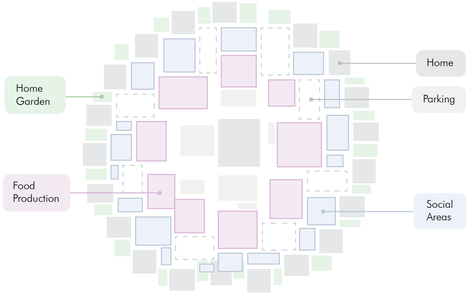
Regen Village

"The hospital is defined by a clear structure consisting of four principal user communities. Each area has a courtyard space that is customised to the needs of the wide range of different users and the atmosphere of each section - with an emphasis on individualised use and clear ownership" (Crockett 2016).

Site Plan[4.1]



Design Concept[4.1]



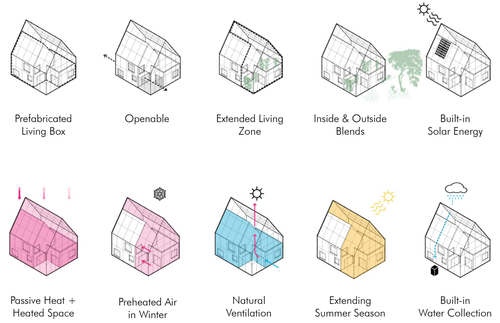
Food Production Units[4.1]

Seasonal Garden | Greenhouse | Heated Greenhousue | Aquaponics

Spatial Configuration

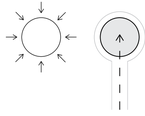
Housing Typologies[4.1]

Spatial Qualities[4.1]



Centralized Organization

This project uses a centralized organization by radiating programmatic spaces to the core of the project.



Chapter 3

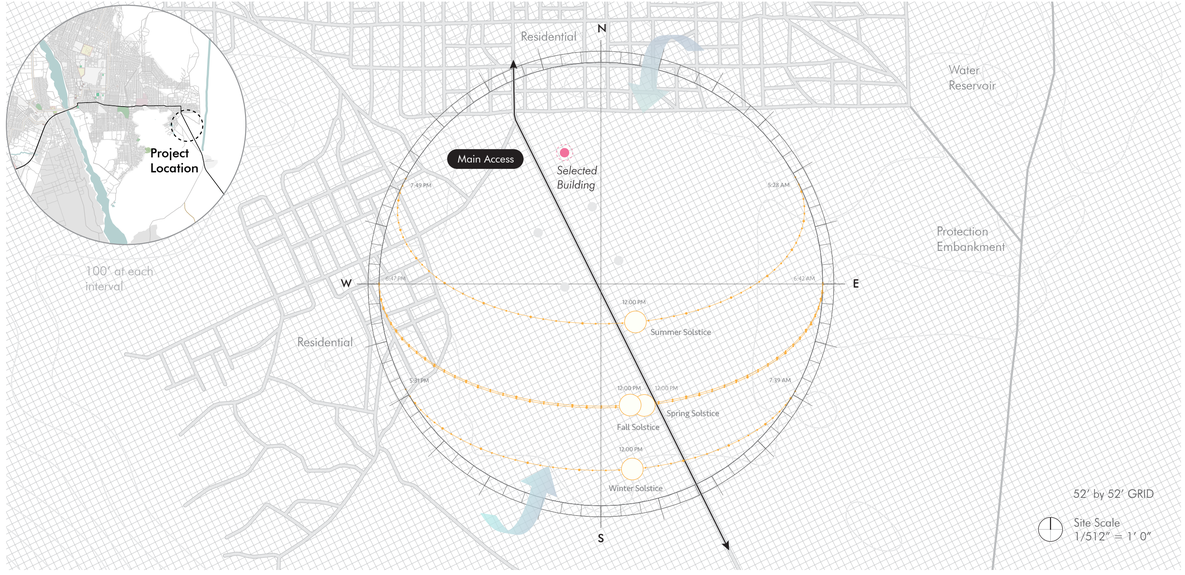
Design Process

Site Analysis

Location: *Kassala, Sudan*

Micro-Scale

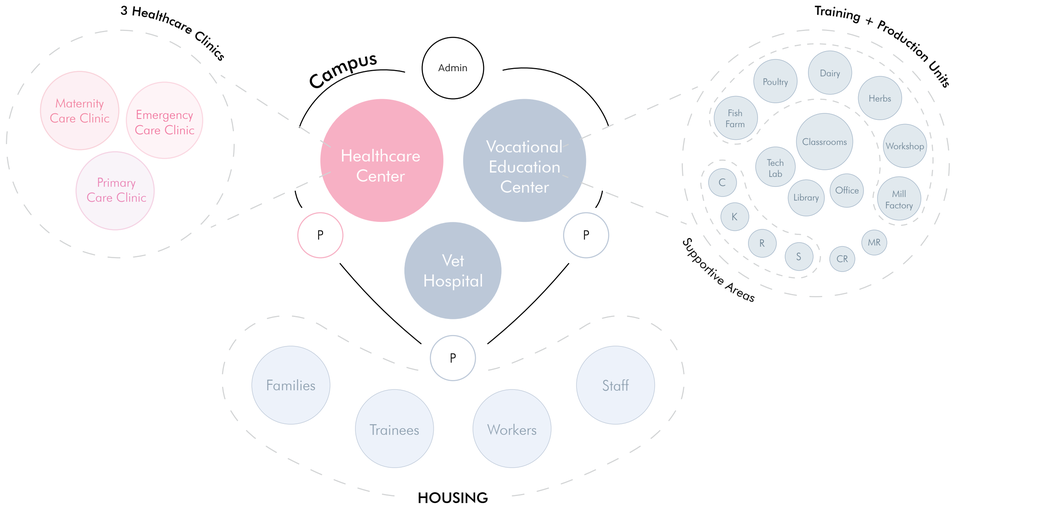
Macro-Scale



Concept

Regen Care

It consists of 4 main programmatic spaces that focus on *healthcare, education, living, and food.*



KEYWORDS: P = Parking C = Cafeteria K = Kitchen R = Restroom S = Storage CR = Conference Room MR = Meeting Room

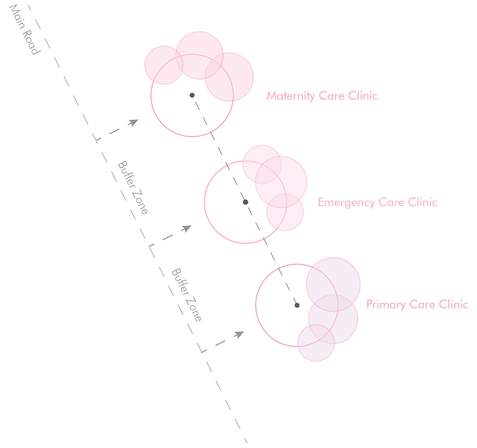
Building Proposal

Healthcare Center

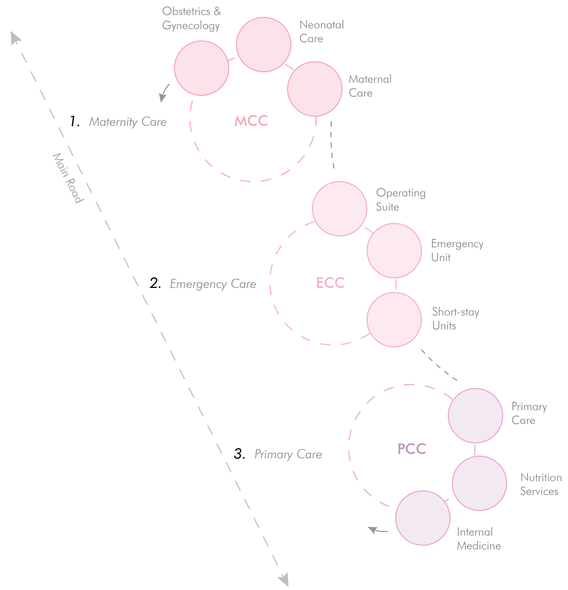
It consists of 3 clinics which are the *Maternity Care Clinic, Emergency Care Clinic and Primary Care Clinic.*

Selected Building

Parti-Diagram

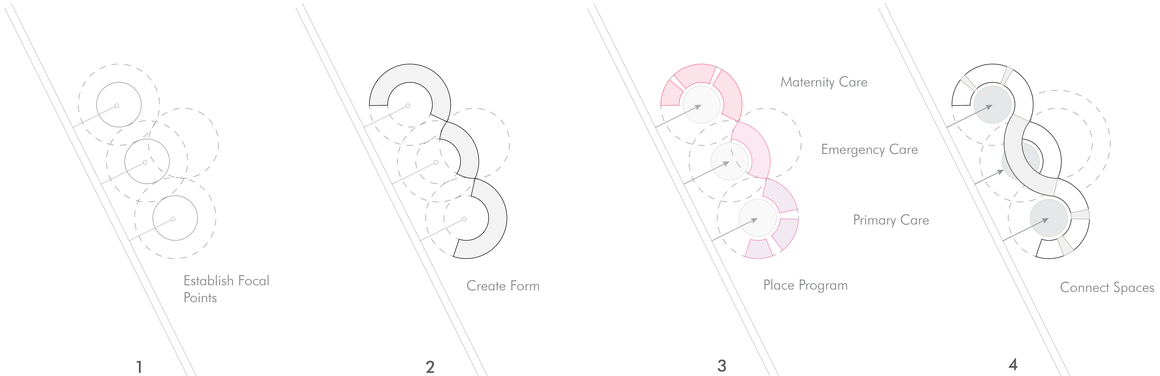


Program Adjacency



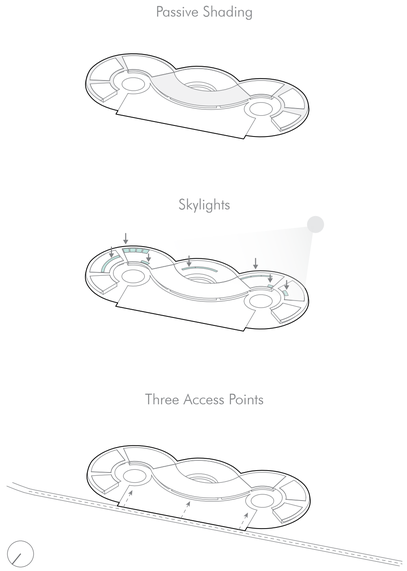
Building Development

Design Formation

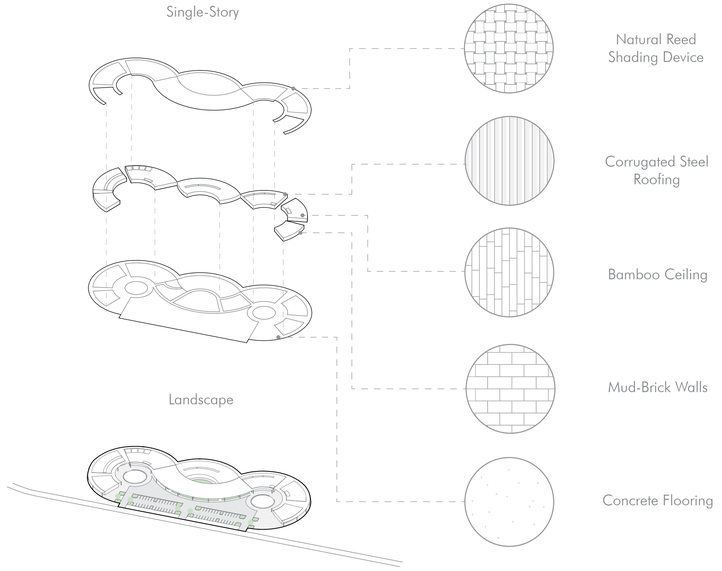


Building Development

Design Concept

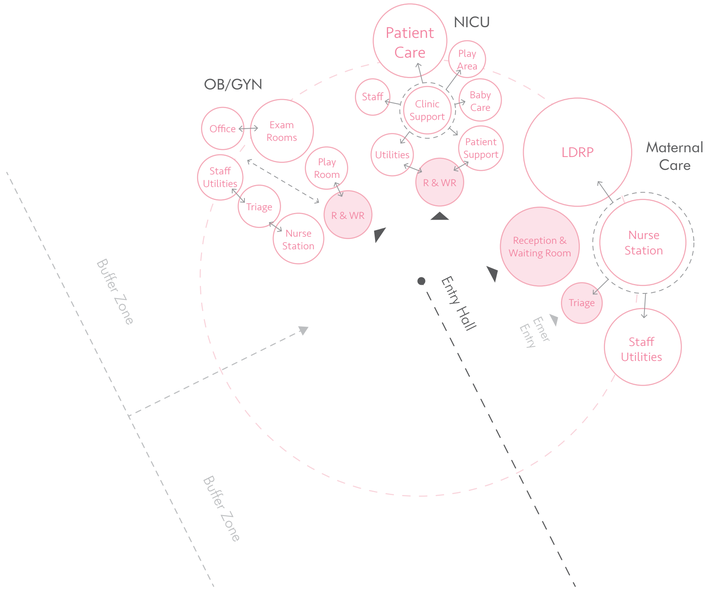


Local Materials



Program | Case Study

Maternity Care Clinic



Department

Maternity Care Clinic

Sub-departments:

1. Obstetrics & Gynecology
2. Neonatal Intensive Care Unit
3. Maternal Care

Precedents used for:

Obstetrics & Gynecology

Patterson Ob/Gyn

Architects: buildingstudio

Neonatal Intensive Care Unit

The Dyson Centre for Neonatal Care

Architects: Feilden Clegg Bradley Studios

Maternal care

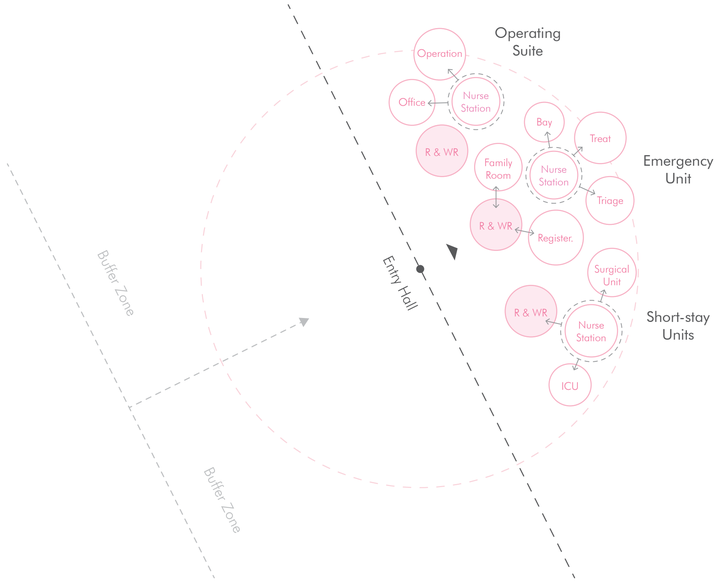
Bay View Birthing Center

Interior Designer: Lori Marsocci

KEYWORDS: R & WR = Reception and Waiting Room LDRP = Labor, Delivery, Recovery and Postpartum Emer Entry = Emergency Entry

Program | Case Study

Emergency Care Clinic



Department

Emergency Care Clinic

Sub-departments:

1. Operating Suite
2. Emergency Unit
3. Short-Stay Units

Precedents used for:

Operating Suite

Surgery Center

Interior Designer: Susan Hughens

Emergency Unit

Hospital of the University of Pennsylvania

Architects: HDR & Fosters + Partners

Short-Stay Units

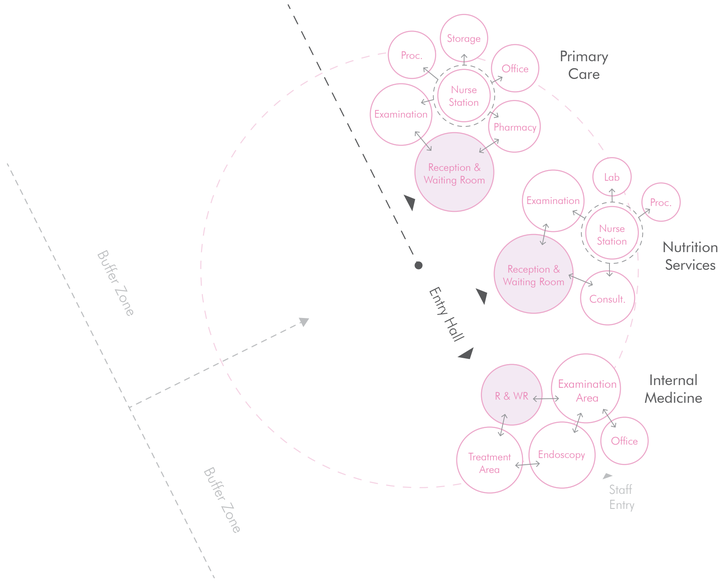
University of Maryland Shore Medical Center

Architects: Marshall Craft Associates

KEYWORDS: R & WR = Reception and waiting room Treat = Treatment Register = Registeration

Program | Case Study

Primary Care Clinic



Department

Primary Care Clinic

Sub-departments:

1. Primary Care
2. Nutrition Services
3. Internal Medicine

Precedents used for:

Primary Care

HEA-6444-A

Architects: Ramtech Building Systems, Inc.

Nutrition Services

HEA-3840-A

Architects: Ramtech Building Systems, Inc.

Internal Medicine

The OmniDirectional Clinic

Architects: KTX archiLAB

KEYWORDS: R & WR = Reception and Waiting Room Emerg Treat = Emergency Treatement Endo = Endoscopy Consult = Consultation Proc = Procedure

Chapter 4

Final Design

Diagrams

Renderings

Regen Care

A self-sustainable, urban-scale project that promotes healing through communal support and spatial design.

- Fatama Mugbil

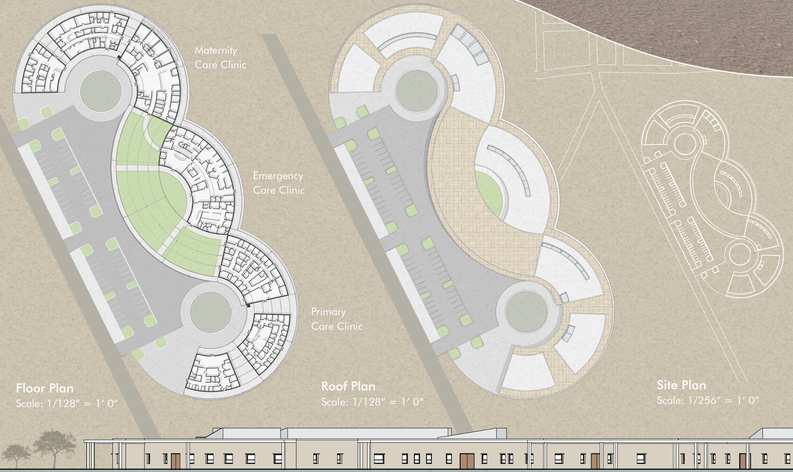
Four circles

Four intersecting circles

Disecting circles

Merging circles

Regen Healthcare Center



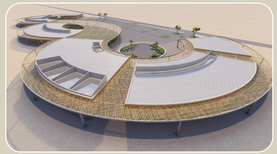
Floor Plan
Scale: 1/128" = 1' 0"

Roof Plan
Scale: 1/128" = 1' 0"

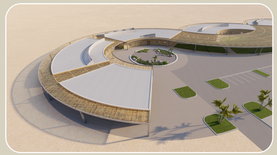
Site Plan
Scale: 1/256" = 1' 0"

Southwest Elevation
Scale: 1/256" = 1' 0"

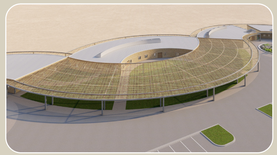
Roof Design



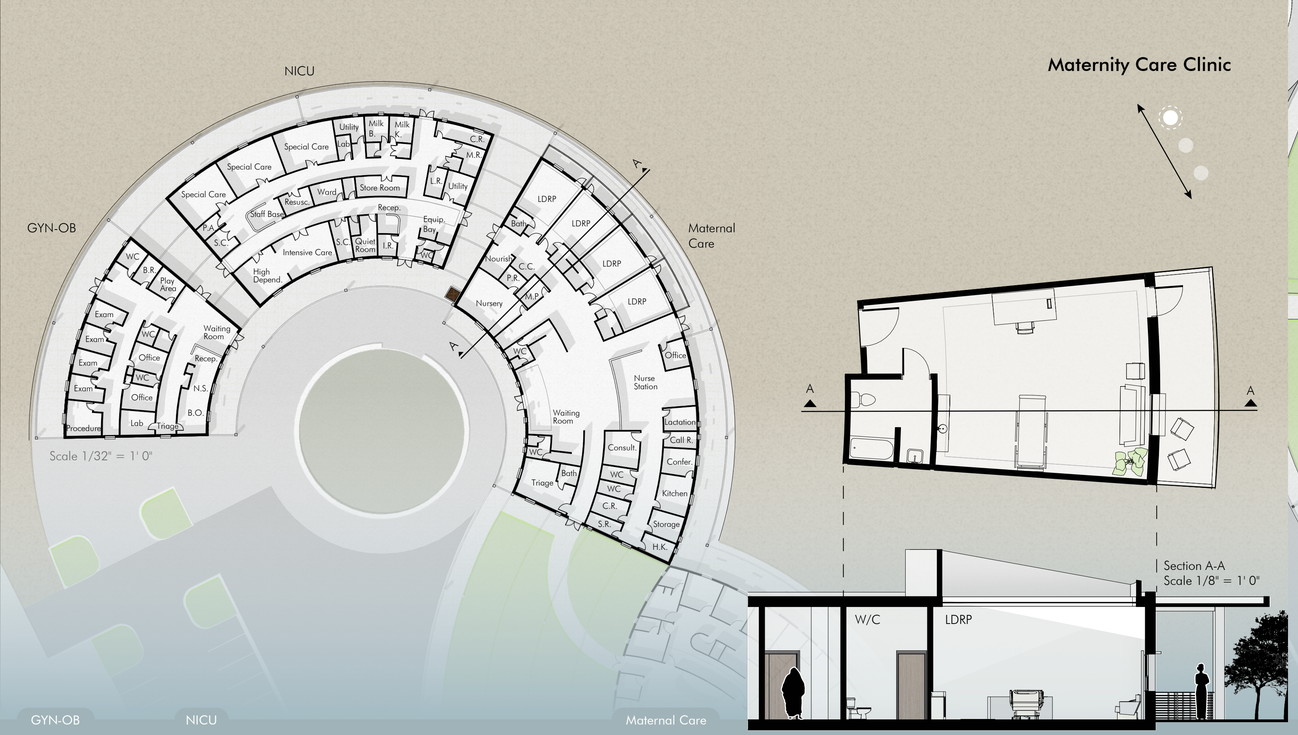
Maternity Care Clinic



Emergency Care Clinic

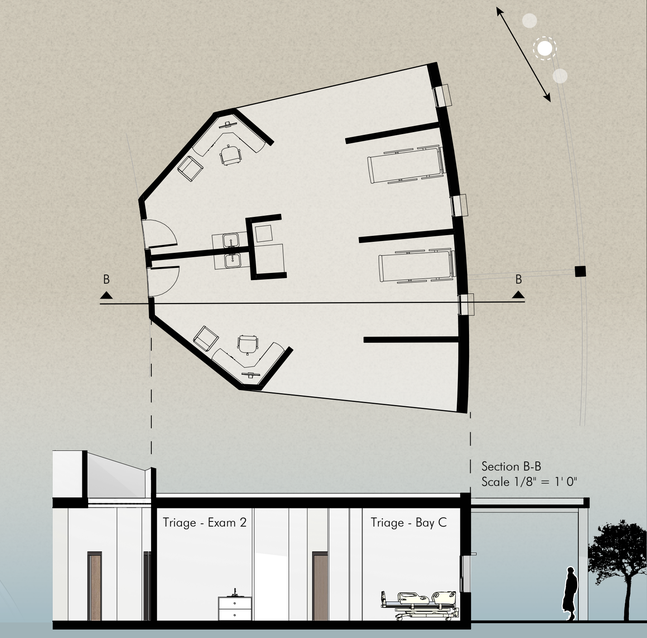


Primary Care Clinic



Maternity Care Clinic

Emergency Care Clinic



GYN-OB

B.O. = Business Office
B.R. = Break Room
N.S. = Nurse Station
Recep. = Reception
WC = Water Closet

NICU

C.R. = Cleaning Room
Equip. Bay = Equipment Bay
I.R. = Interview Room
L.R. = Laundry Room
Milk B. = Milk Bank
Milk K. = Milk Kitchen
M.R. = Mechanical Room
P.A. = Play Area
Resusc. = Resuscitare
S.C. = Special Care; Four Cot Nursery

Maternal Care

Call R. = Call Room
C.C. = Crash Carts
C.R. = Cleaning Room
Confer. = Conference Room
H.K. = House Keeping
LDRP = Labor, Delivery, Recovery, Postpartum
M.P. = Med Prep Room
P.R. = Procedure Room
S.R. = Storage Room
WC = Water Closet

Operating Suite

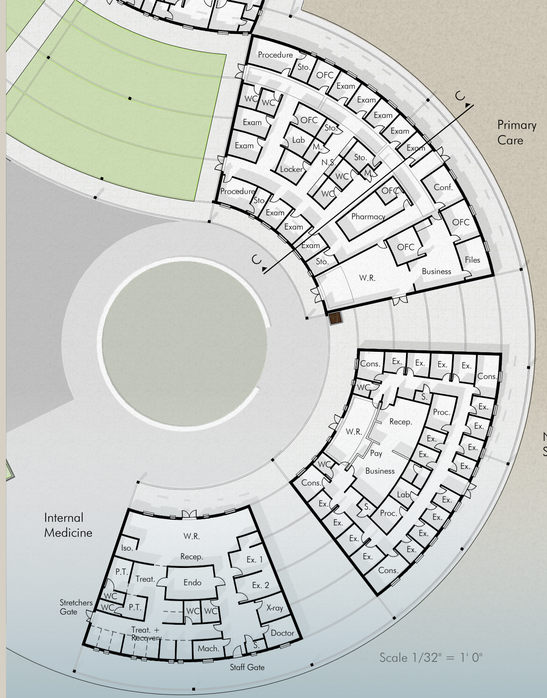
Recep. = Reception
Ster. & Supp. = Sterilization & Supplies
WC = Water Closet

Emergency Unit

Bay A, B, & C = Triage Strecther Bay
G.K. = Gate Keeper
Recep. = Reception
Reg. = Registeration
T1, T2, T3, T4 = Triage Exam

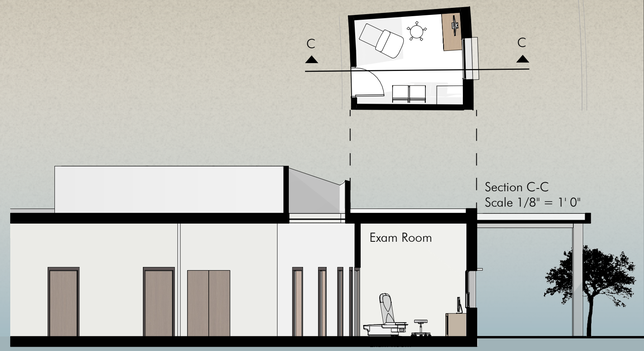
Short-Stay Units

CU = Clean Utility
ICU = Intensive Care Unit
I.P. = Inpatient Room
R. = Reception
SU = Soiled Utility
WC = Water Closet
W.R. = Waiting Room



Scale 1/32" = 1' 0"

Primary Care Clinic



Section C-C
Scale 1/8" = 1' 0"

Primary Care

Conf. = Conference
M. = Mechanical Room
N.S. = Nurse Station
OFC = Office
Sto. = Storage
WC = Water Closet
W.R. = Waiting Room

Nutrition Services

Cons. = Consultation
Ex. = Exam Room
Proc. = Procedure Room
S. = Storage

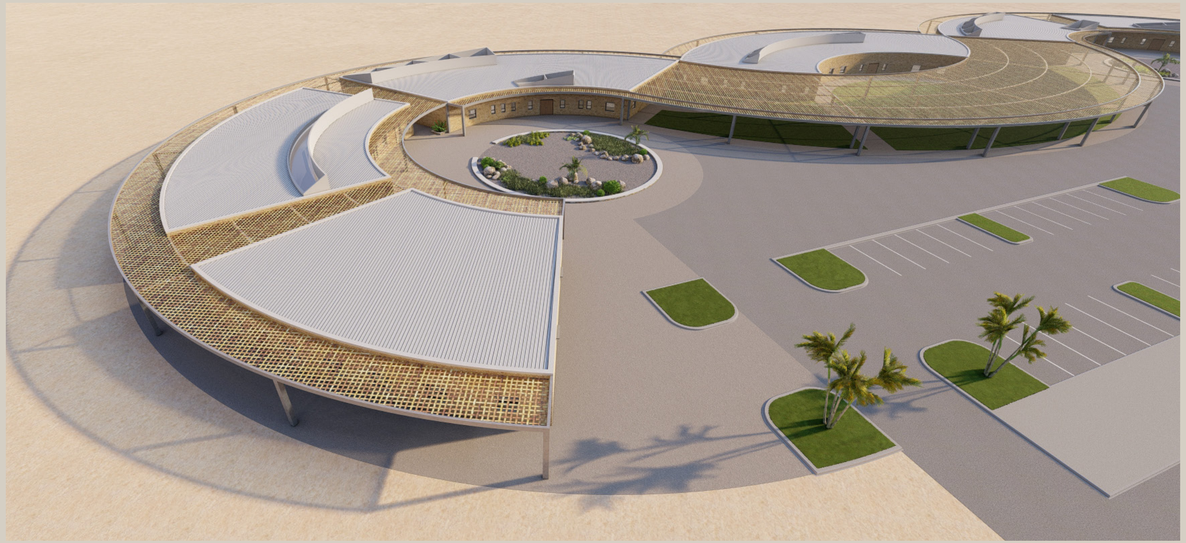
Internal Medicine

Endo = Endoscopy Room
Iso. = Isolation Room
Mach. = Machinery
P.T. = Pre-Treatment
Treat. = Treatment

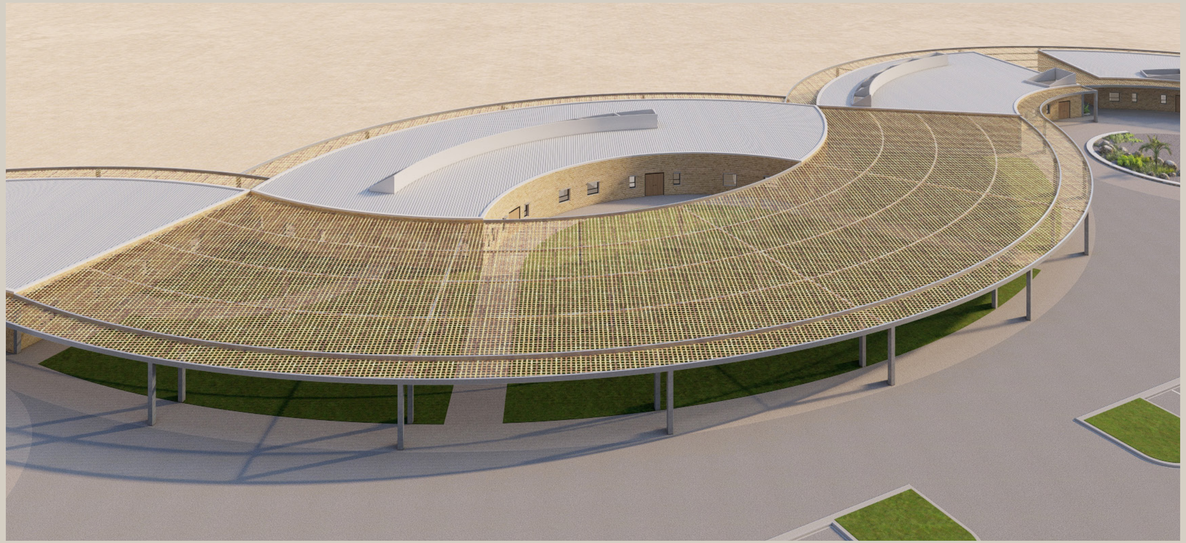
N

Final Design

Renderings

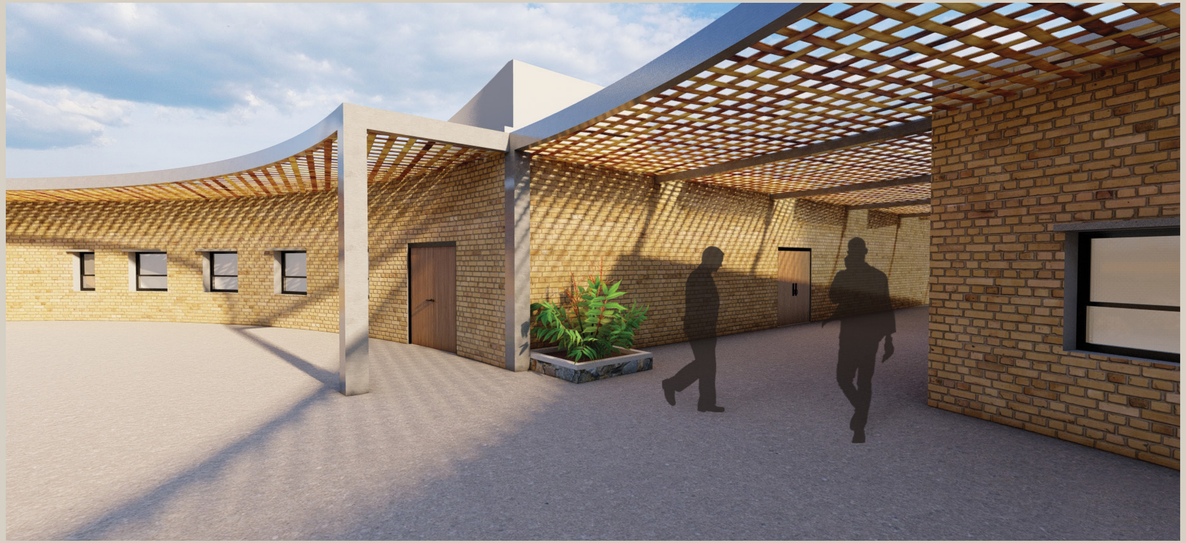


Exterior view of the Maternal Care Clinic



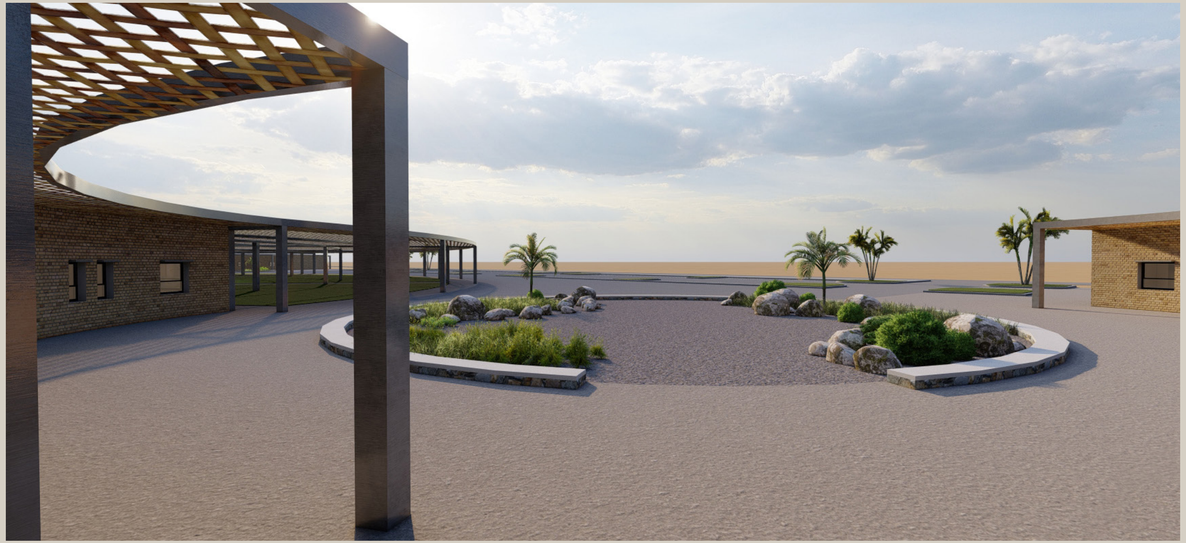
Exterior view of the Emergency Care Clinic

Exterior view of the Primary Care Clinic



Exterior view of the Primary Care Clinic

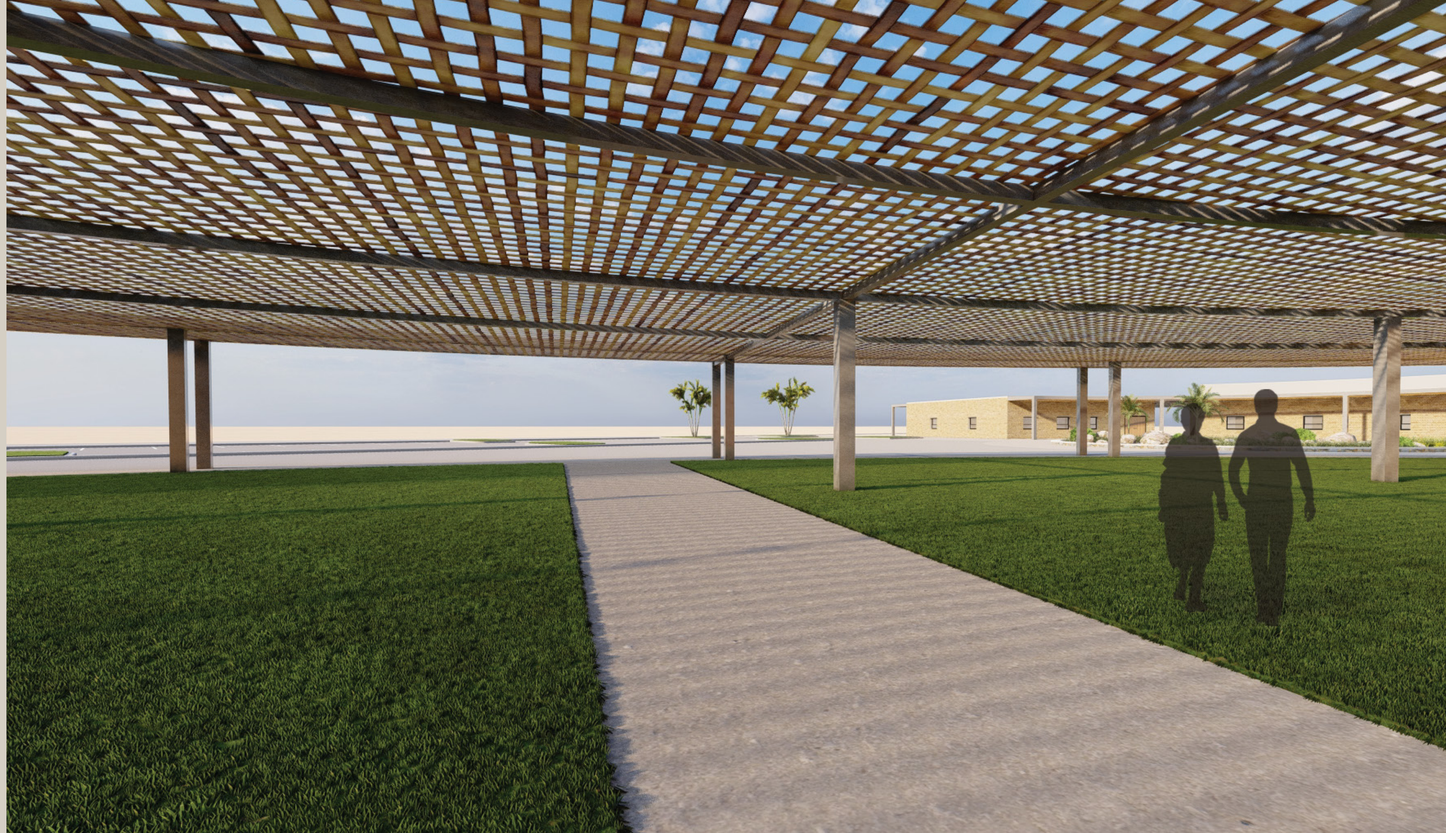
Exterior View near the Primary Care Clinic.



Exterior view looking at the garden
inspired by japanese healing gardens

Exterior view of the indoor-outdoor
transitional spaces between buildings

Exterior view looking at the landscape and
the natural reed canopy

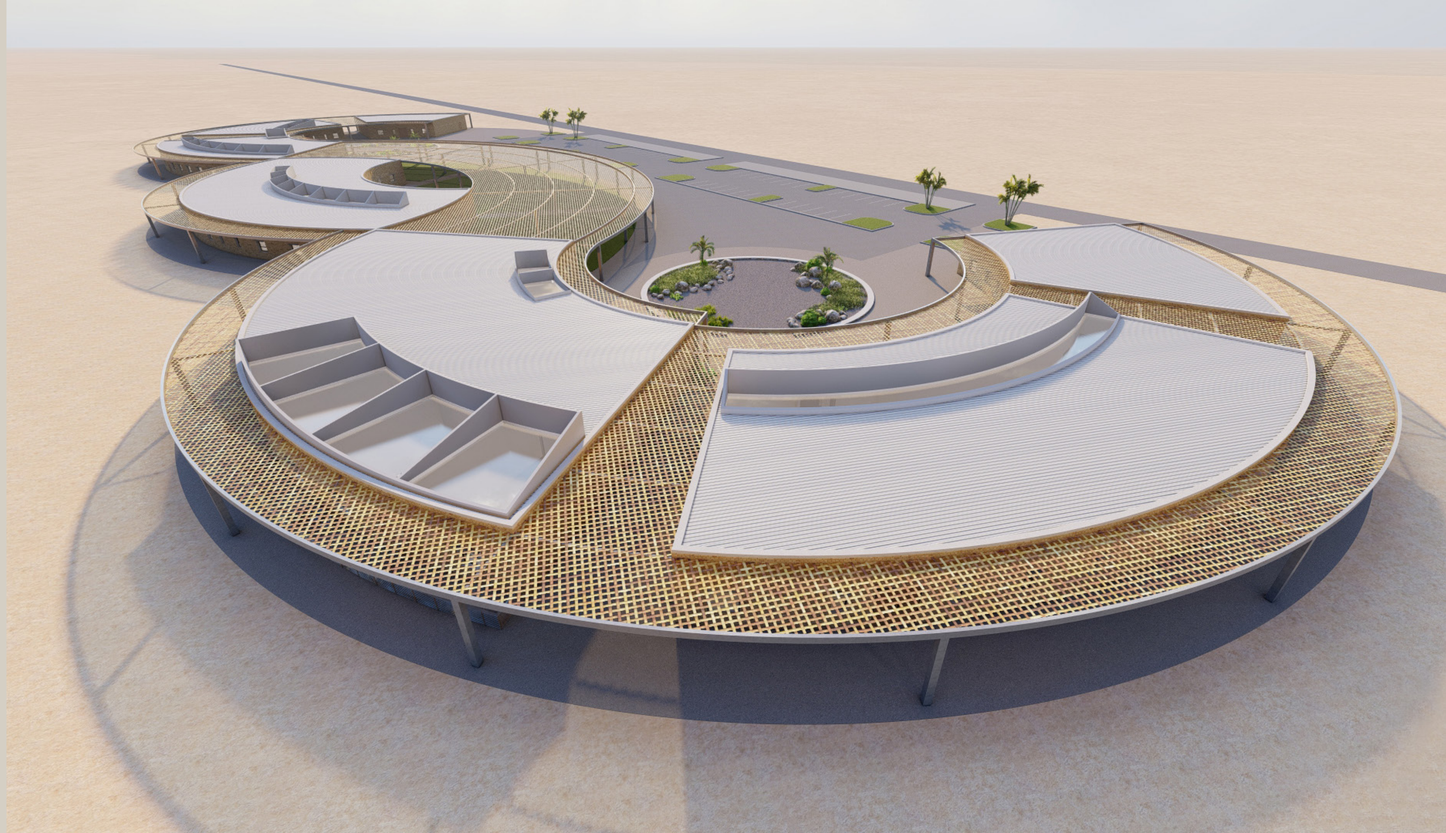


Interior view of the Emergency Unit

Interior view of the Nutrition Services Building

Interior view of the Primary Care department

Interior view of delivery unit inside the
Maternal Care department



Chapter 5

Reflections

Student Reflections

I. Education Value

What insights have you gathered in relation to connection between research and design processes by this course/studio? Can you list one or two of the most valuable/meaningful experiences in this area? (i.e., skill building, critical thinking, representation, etc)

One of the most valuable experiences I've had while performing research and going through the design process during this course was being able to apply my knowledge and export it into practical use. I got to understand the design literature for my project and be able to implement it into my design, which further enhanced my design output.

II. Connectedness Insights

Undergraduate Architecture Thesis is a 3-course sequence starting with ARCH 4014: Thesis Preparation that is taught as a seminar course (student teach ratio 1:15), and then ARCH 5016: Thesis Research (student teach ratio 1:1) and ARCH 5017: Thesis Studio that is structured with an advisor/student relationship (student teach ratio 1:1 plus support from a coordinator). Can you please describe how your project evolved / research developed within this 3-course framework?

Within the 3-course sequence beginning with Thesis Prep to Thesis Research and then to Thesis Studio, my project evolved significantly in regards to the scope of my project, the methodology and the final intent or design goal. I first began my thesis by focusing on single-family home buildings for those in need; however, when exploring large issues like food insecurity and lack of education, I then moved onto thinking about how I can consider all these factors and create a design that can target these insecurities. Finally, for my Thesis Studio project, I was able to implement a large-scale project that incorporated all these factors such as healthcare, education, food, and living into my design.

III. Integrated Problem Solving

Thesis is thought to be a culmination of all you have learned, where you hone in on an interest or strength. Please expand on what other courses influenced your thesis research and how it help you develop your thesis research project.

The other courses that have influenced my thesis research and how I developed my thesis project was with the help of my minor in psychology. Hand in hand, I got to understand how our socioenvironmental surroundings can affect an individual's behavior and lifestyle by learning health psychology and cross-cultural psychology. Thus, I was able to use thoughtful organizational techniques and implement programmatic features within my design that were able to influence an individual in a positive manner.

IV. Values-Growth

Marking the transition between the academic and professional worlds, the thesis project is an opportunity for you to define your individual position with regard to a specific aspect of architectural practice. Looking back on your thesis experience as compared to other studios, please expand on how/if thesis provided opportunities for you to hone your critical thinking and communication skills. Specifically, can you describe one or two of the most valuable/meaningful experiences where you were able to grow and/or gain and understanding of your strengths/weaknesses?

During my thesis experiences, I was able to understand greatly about the influence on architecture on real-life world problems. With that being in mind, I had to hone my critical thinking and knowledge upon practical architecture and, even so, therapeutic architecture to understand and learn how architecture can support lives in a more meaningful manner. When creating architecture, it was more than just creating a building but about considering cultural, social, and environmental factors that can influence an individual's lifestyle. Knowledge about these factors helped me understand and further enhance the design and goal intent of my project.

Summary

I. What is Regen Care?

Regen Care is an self-sustainable urban-scale project that operates in site-scale and building-scale. The Regen Care Campus consists of spaces that focus on healthcare, education, living and the production of food. For my design proposal, I have selected the healthcare center to design in building-scale.

II. What is the purpose of my project?

The purpose of this project was to help a large community, whom either have been physically/mentally deprived or internally displaced, through a series of programmatic spaces. These spaces aim to heal, strengthen, and educate the sick and unable, and then transform them into healthy contributers of the community.

III. What is the design intent of my project?

This project is meant to be sustainable and affordable; Therefore, I am using local workforce and traditional method of construction for my design. Moreover, to reduce costs, I have focused on designing single-story structures and including affordable materials like brick, natural reed, and bamboo within my design.

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